

CHEMISTRY 102

GENERAL CHEMISTRY II, Fall 2009

Course Description: General inorganic chemistry. Introductory study of the laws of chemistry. This course is classified as a General Education course.

Prerequisites: A grade of "C" or better in MATH 113 or a math score of 22 on the enhanced ACT or permission of department head, passing grade for CHEM 101

Textbook: "Essentials of General Chemistry," 2nd Ed., Darrel D. Ebbing, Steven D. Gammon & Ronald O. Ragsdale, Houghton Mifflin, New York, NY (2006). ISBN: 0-618-49175-9

LiveText Membership: participation in this course requires that you possess a membership in LiveText. Memberships may be purchased through the bookstore and activated by going online to www.livertext.com. This membership belongs to you and may be used for other courses at McNeese and for your own educational needs. If you already have a LiveText membership, you do not need to purchase another one.

Optional material: Chemistry 102 Final Test Bank, no longer used, but contains many problems good for study

Course Objectives/Student Learning Outcomes: This course is classified as a General Education course and addresses general education competencies (GEC) 1a and 2-7. After completing the course the student will be able to:

- understand and apply the scientific method (GEC 5)
- be able to manipulate numerical data and use statistical methods (GEC 4)
- read and analyze with comprehension (GEC 2)
- reason abstractly and think critically (GEC 3)
- understand the basics of solutions
- understand and use various concentration units appropriately
- understand molecular kinetics and be able to determine rate laws given valid data
- understand the use of the Arrhenius equation
- understand chemical equilibrium and apply equilibrium to problems
- understand chemical thermodynamics and be able to apply it
- understand the link between chemical thermodynamics and chemical equilibrium
- understand the basic definitions for acids and bases, and learn which materials are strong acids, which are strong bases and which are weak acids and which are weak bases
- understand acid-base equilibria and the concept of pH
- understand equilibria as applied to compounds of limited solubility and formation of complexes
- understand oxidation-reduction (redox) chemistry, and the basics of electrochemistry
- be able to apply the Nernst equation
- understand the basics of complex formation, be able to classify ligands, and various isomer types

Assessment: In the lecture portion of the class, assessment of progress will be determined by classroom tests over the appropriate materials and a comprehensive departmental final. The classroom tests may include short essays, short objective answers, calculations (with justifications), multiple choice or some combination of these. The departmental final will be a multiple choice test.

The laboratory section of the class assessment will be via a departmental quiz, grading of written laboratory reports and a comprehensive departmental laboratory final. The departmental laboratory final will be a multiple choice test.

Course Requirements and Evaluation: In the lecture portion of this class, students will be required to read and comprehend material covered in class as well as any assigned readings. To get the most out of lectures, students should read the material prior to the lecture. There will be 4 homework assignments of 25 points each and 4 hourly tests plus the final. These numbers account for the lecture portion of your grade which accounts for 75% of your grade. The lowest hourly test score will be dropped from the student's average.

The laboratory portion of the class will require students to read and comprehend material covered in pre-lab lectures as well as any assigned readings. Performance of laboratory work and write-up and timely submission of lab reports are also required. Your performance in the 102+ lab accounts for 25% of your grade (an additional 167 possible points). The apportionment of points is shown below:

Hourly Tests:	300 points
Homework:	100 points
Final:	100 points
Lab:	167 points
Total Points	667 points

The grading scale is a ten point grading scale.

A = 100-90; B = 89-80; C = 79-70; D = 69-60; F = 59-0

Students are strongly encouraged to attend all class and lab meetings. Acceptable excused absences for tests/labs include only illness (with a doctor's excuse), university functions, or a death in the immediate family. If you have other problems please contact your instructor prior to the test/lab if possible.

Methods of Instruction: For the lecture component, instruction will consist of classroom (and possibly Blackboard) lectures and discussions, assigned readings, homework and other written assignments. The laboratory portion will consist of pre-lab lectures/discussions, timely and efficient performance of laboratory work and timely submission of laboratory reports.

Course and University Policies:

Diversity Statement: *Students should visit the MSU webpage at <http://www.mcneese.edu/policy/diversity.htm> for information about diversity awareness and sexual harassment policies and procedures.*

ADA Statement: *Students with impaired sensory, manual, or speaking skills are encouraged and have*

the responsibility to contact their instructor, in a timely fashion, regarding reasonable accommodation needs. Any student with a disability is encouraged to contact the office of Services for Students with Disabilities in Drew Hall, Room 200, (337) 475-5916. It is each student's responsibility to register with the office of Services for Students with Disabilities when requesting a reasonable accommodation. Please visit <http://www.mcneese.edu/policy/ada.php> for more information.

Academic Integrity Statement: McNeese State University seeks to strengthen the value of student academic achievement by fostering a learning environment which is based on honesty, respect, fairness, responsibility, and excellence. Consequently, the University expects students to demonstrate honesty and integrity in all academic relationships. Please visit <http://www.mcneese.edu/integrity/> for details on this policy.

Course content: The following is a tentative outline of the topics/chapters and timeline for the course.

Week	Topic
Aug17	Welcome to Chem-102 Review of CHEM 101
Aug-20-25	Intro, Thermochemistry Chapter 6 Thermodynamics, ,
Aug27-Sept5	Concentration Units, Titrations, Solutions, Chapters 4 & 12
Sept 9th	Test 1 Chapters 6, 4 & 12.
Sep 10-19	Rates of Reaction, Chapter 13
Sep 22-26	Chemical Equilibrium, Chapter 14
Oct 5 th	Test 2 Chapters 13 & 14
Oct-6-15	Acids & Bases Chapter 15
Oct-17-27	Acid-Base Equilibria Chapter 16
Oct-30	Test 3 Chapters 15 & 16
Oct-31-Nov3	Solubility and Complex Ion Equilibria, Chapter 17
Nov5-Nov19	Thermodynamics Chapter 18 and Electrochemistry Chapter 19 Coordination Compounds, Chapter 21
Nov-20	Test 4 Chapters 17, 18 & 19
Nov-30-1	Review for final
Dec-3rd	Final for CHEM 102 , 8:00-10.00 am,